

FIBER OPTICAL APPARATUS AND SYSTEM FOR IN SITU LASER PLASMA SPEC- TROSCOPY

Abstract

In in-situ laser plasma spectroscopy (LPS) apparatus includes an enclosure for housing a laser energy source and associated signal coupling optics. A main fiber is attached to the enclosure at a first end of the main fiber, and attached to a probe at a second end of the main fiber. The main fiber is configured for transmitting input laser energy from the laser energy source to a target and for transmitting laser induced plasma emission signals back from the target. The probe has a single focal lens for directing the input laser energy from the main fiber to the target, and for directing the laser induced plasma emission signals from the target to the main fiber.